UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/826,537	04/15/2004	Kwok Wai Cheung	IPVBP004	2147

34071 7590 11/18/2008

IPVENTURE, INC.
5150 EL CAMINO REAL
SUITE A-22
LOS ALTOS, CA 94022

EXAMINER	
BLAIR, KILE O	

ART UNIT	PAPER NUMBER
2614	

MAIL DATE	DELIVERY MODE
11/18/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/826,537	CHEUNG ET AL.	
	Examiner	Art Unit	
	Kile O. Blair	2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 July 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-16,18-22 and 24-26* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-16,18-22 and 24-26* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office action is in response to the communication filed on 4/8/2008. Claims 1-3, 5-16, 18-22 and 24-26 are pending. Claims 4, 17, and 23 are canceled.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-3, 5-7, 9, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pompei (US Pub. No. 2001/0007591 A1) in view of Takahashi et al. (US Pat. No. 6,643,377) in further view of Kuriyama et al. (JP Pub. No. 1-109898).

Regarding claim 1, Pompei teaches a directional audio delivery apparatus for a system, comprising: audio conversion circuitry that produces ultrasonic signals based on the decoded audio signals provided by a device (a modulator 112 receives a composite audio signal from the summer 110 and an ultrasonic carrier signal from the carrier generator 114, and modulates the ultrasonic carrier signal with the composite audio signal, Pompei, [0022]) and a directional speaker that outputs an ultrasonic output for a user based on the ultrasonic signals (acoustic transducer array 122, Pompei, [0022]) wherein said apparatus further comprises a beam-attribute control unit operatively connected to said directional speaker (delay circuit 120 for applying a phase shift for steering/focusing/shaping the ultrasonic beam, Pompei, [0035]), said beam-attribute control unit being configured to electronically control an attribute of the output

of said directional speaker (the delay circuit causes the phased array to vary audio beam characteristics, Pompei, [0039]), wherein the ultrasonic output generates audio output (a suitably controlled phased array may transmit multiple ultrasonic beams simultaneously so that multiple audible beams are generated in the desired directions, Pompei, [0039]), wherein the attribute controlled influences a beam width of the audio output of said directional speaker so that the beam width of the audio output can be changed (audio beam characteristics such as beam width, Pompei, [0039]).

Although Pompei does not teach the limitation of providing decoded signals, Takahashi et al. teaches a set top box (Takahashi et al., Col. 3, lines 53-57) which inherently provides decoded audio signals to the system which outputs ultrasonic waves (Takahashi et al., Col. 3, lines 44-53). It would have been obvious to use the apparatus of Pompei with any device that receives incoming encoded signals and provides decoded audio signals for use by the system; specifically a set top box as disclosed by Takahashi et al., with the motivation of outputting audio with high directionality as disclosed by Takahashi et al., where the set top box receives an encoded signal and decodes it into an audio signal, at which point the circuitry of Pompei converts it into an ultrasonic signal.

Although Pompei and Takahashi et al. do not explicitly disclose the feature wherein the beam-attribute control unit receives wireless inputs from an electronic device to control the attribute, wherein the beam direction depends on the position of the electronic device, and wherein as the position of the electronic device changes, the beam direction can automatically change, Takahashi et al. does teach a remote

controller (commander, Takahashi et al., col. 4, lines 43-51) for controlling the beam direction by rotating the speakers, although not the specific feature wherein the beam direction changes as the position of the electric device (i.e. remote control) changes. Kuriyama et al. teaches a system of directing a set of speakers to a remote control based on signals transmitted to a light receiving element indicating a position of the remote control (see English abstract and constitution) and it would have been obvious to use this system of automatic beam direction control with the apparatus of Pompei in view of Takahashi et al. with the motivation of improving a similar device with the feature of automatic beam direction control in the same way that Kuriyama et al. has improved a conventional speaker and remote control unit.

Regarding claim 2, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 1, wherein said system is one of an audio system, a stereo system, a television system (set top box, Takahashi et al., Col. 3, lines 53-57), a radio receiver, Digital Versatile Disc (DVD) player, a compact disc (CD) player, and a Video Cassette Recorder (VCR) player.

Regarding claim 3, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 1. Although Pompei does not explicitly disclose that the speaker is repositionable with respect to the system in his own invention, Pompei does disclose that the prior art teaches a directional speaker that is repositionable with respect to said system (ultrasonic signal is typically directed along the selected projection path by a mechanical steering device, Pompei, [0006]). It would have been obvious to one of ordinary skill in the art to

implement, into the apparatus of Pompei in view of Takahashi et al., the feature of mechanical steering, or repositioning, as disclosed as prior art by Pompei since doing so would have been obvious to try.

Regarding claim 5, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 1.

Although Pompei in view of Takahashi et al. in further view of Kuriyama et al. does not explicitly teach the feature wherein a beam width of the audio output of the directional speaker is controlled wirelessly by the user via an electronic device, Pompei does teach varying beam width, although not explicitly making variation using wireless means, however Kuriyama teaches a remote control for changing the direction of beams and it would have been obvious to try to use the same remote control to adjust the beam width as disclosed by Pompei in order to improve the device by making beam width adjustable remotely in the same way that Kuriyama improved the device by making the beam direction adjustable remotely.

Regarding claim 6, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 5

Although Pompei in view of Takahashi et al. in further view of Kuriyama et al. does not explicitly teach the feature of increasing the ultrasonic frequency of the ultrasonic signals, which increases the attenuation and the beam width of the audio output, Pompei discloses different frequencies, whenever the frequency is increased, the beam width and attenuation inherently increase as well since it is known in the art that ultrasonic waves have decreasing directivity as frequency increases).

Regarding claim 7, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 1, wherein said directional speaker has a plurality of separately controllable regions, and wherein said beam-attribute control unit activates one or more of the controllable regions to control the ultrasonic output from said directional speaker (the acoustic transducers 0-11 [Pompei, 0025] each output an ultrasonic beam simultaneously so that multiple audible beams are generated in desired directions, [Pompei, 0039]).

Regarding claim 9, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 1, further comprising one additional directional speaker to create stereo effect (left and right speakers, Takahashi et al., Col. 3, lines 44-53). Although Pompei does not explicitly teach the feature of using two speakers to create a stereo effect, it would have been obvious to one of ordinary skill in the art to use this configuration as disclosed by Takahashi et al. with the motivation of creating a stereo effect which is well known in the art.

Regarding claim 13, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 1, wherein said directional audio delivery apparatus further comprises an environmental adjustment unit that is configured to modify the audio signals or the ultrasonic signals in accordance with a piece of information from the environment in the vicinity of a portable device used by the user of said apparatus (the temperature/humidity control device 130 may include a thermostatically controlled cooler, or a dehumidifier that maintains

desired atmospheric conditions along the path traversed by the ultrasonic beam based on the preexisting conditions, Pompei, [0044]).

Claims 8 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pompei in view of Takahashi et al. in further view of Kuriyama et al. in further view of Norris et al. (US Pub. No. 2004/0052387 A1).

Regarding claim 8, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 1. Although Pompei in view of Takahashi et al. in further view of Kuriyama et al. does not explicitly teach the feature wherein said directional speaker has a curved surface, which can be a curved emitting surface or a curved reflecting surface, so that the audio output produced is intentionally configured to be non-collinear, Pompei does teach that multiple audible beams may be generated in desired directions (Pompei, [0039]). Norris et al. discloses a speaker with a convex emitter plate comprising an array of cavities that allows sound to be generated over a broad area (Norris et al., [0154]). It would have been obvious to one of ordinary skill in the to use the devices of Pompei and Norris et al. to cause the sound output to be non-collinearly generated in a number of directions since doing so would have yielded a predictable result.

Regarding claim 25, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 1. Although Pompei in view of Takahashi et al. in further view of Kuriyama et al. does not explicitly teach the feature wherein the beam-attribute control unit is configured to

change a beam width of the audio output of said directional speaker so that the beam width is diverging around the vicinity of the user, Norris discloses a convex configuration of transducers (Norris et al., Fig. 15) and it would have been obvious to one of ordinary skill in the art to configure the transducer array of Pompei in such a manner as that of Norris et al. with the motivation of having the ultrasonic beams diverge around the user after being affected by the temperature/ humidity control device (the temperature/ humidity control device maintains desired atmospheric conditions along the path traversed by the ultrasonic beam, Pompei, [0044]).

Claims 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pompei in view of Takahashi et al. in further view of Kuriyama et al. in further view of Wiser et al. (US Pub. No. 2003/0009248 A1).

Regarding claim 10, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 1.

Although Pompei in view of Takahashi et al. in further view of Kuriyama et al. does not explicitly teach the feature wherein said apparatus further comprises a personalization unit operatively connected to said audio conversion circuitry, said personalization unit modifies the audio signals or the ultrasonic signals in accordance with an audio characteristic associated with a user of said apparatus, it would have been obvious to one of ordinary skill in the art to utilize the audio processing profiles of Wiser et al. ([0088]) into the set top box of Pompei in view of Takahashi et al. with the motivation of providing a more suitable and personalized audio signal to the individual.

Regarding claim 12, Pompei in view of Takahashi et al. in further view of Kuriyama et al. in further view of Wiser et al. teaches a directional audio delivery apparatus as recited in claim 10, wherein the audio characteristic pertains to a hearing characteristic and/or a hearing preference associated with the user (user can edit audio profile using equalizer button, Wiser et al., [0088]).

Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pompei in view of Takahashi et al. in further view of Kuriyama et al. in further view of Wiser et al. and in further view of Brain (Brain; Marshall, How USB Ports Work, October 11, 2002, www.howstuffworks.com/usb).

Regarding claim 11, Pompei in view of Takahashi et al. in further view of Wiser et al. teaches a directional audio delivery apparatus as recited in claim 10.

Although Pompei in view of Takahashi et al. in further view of Kuriyama et al. in further view of Wiser et al. does not explicitly teach the feature wherein the audio characteristic is provided to said directional audio delivery apparatus in a removable, portable data storage device that can be electrically connected to said apparatus, it would have been obvious to one of ordinary skill in the art to store the audio characteristic in a portable USB drive as taught by Brain (storage device, pg. 4, ¶ 5) with the motivation of making the characteristics portable from set top box to set top box.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pompei in view of Takahashi et al. in further view of Kuriyama et al. in further view of Tokumo et al. (US Pat. No. 4,476,571).

Regarding claim 14, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 13. Although Pompei in view of Takahashi et al. in further view of Kuriyama et al. does not explicitly teach the feature wherein the piece of information includes a noise level, Tokumo et al. teaches adjusting the volume level of audio signals based on environmental noise levels (Tokumo et al, abstract) and it would have been obvious to improve the apparatus of Pompei in view of Takahashi et al. in further view of Kuriyama et al. with the same noise adjustment feature since it is well known in the art to adjust a volume based on an environmental noise level.

Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pompei in view of Takahashi et al. in further view of Kuriyama et al. in further view of Tanaka et al. (US Pat. No. 4,823,908).

Regarding claim 15, Pompei in view of Takahashi et al. in further view of Kuriyama et al. teaches a directional audio delivery apparatus as recited in claim 1. Although Pompei in view of Takahashi et al. in further view of Kuriyama et al. does not explicitly teach the feature wherein the ultrasonic output from said directional speaker is reflected by at least one reflecting surface (ultrasonic wave radiator 8 which reflects of the reflective plate 19 as seen in Fig. 16 of Tanaka et al., col.10, lines 7-21) before

propagating into the free space where a user of the apparatus is positioned, as directionally-constrained audio output, it would have been obvious for one of ordinary skill in the art to use the reflective plate of Tanaka et al. with the directional audio delivery apparatus of Pompei in view of Takahashi et al. in further view of Kuriyama et al. with the motivation of providing a directional ultrasonic signal to a user with the some attenuation to protect the user from waves that are too powerful and potentially harmful, a concern recognized by Pompei (To reduce the possibility of exceeding an allowable ultrasound exposure, a ranging unit 540 is provided for determining the distance to the nearest listener and appropriately adjusting the output of the adaptive parametric audio system by way of the amplifier, Pompei, [0054]).

Claim 16, 18-22, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pompei in view of Kuriyama et al.

Regarding claim 16, Pompei teaches the a method for providing directionally constrained audio to a user using a directional speaker, said method comprising: receiving audio signals to be delivered to the user from an audio device (A modulator 112 receives a composite audio signal from the summer 110 and an ultrasonic carrier signal from the carrier generator 114, and modulates the ultrasonic carrier signal with the composite audio signal, Pompei, [0022]); receiving a beam attribute input (atmospheric conditions, Pompei, [0044]); and driving the directional speaker to generate the directionally constrained audio (acoustic transducer array 122 driven by a signal generator, Pompei, [0022]), wherein the beam attribute input controls at least one

attribute of the directionally constrained audio (the temperature/humidity control device 130 may include a thermostatically controlled cooler, or a dehumidifier that maintains desired atmospheric conditions along the path traversed by the ultrasonic beam based on the preexisting conditions, Pompei, [0044]), wherein the method further comprises converting the audio signals to ultrasonic signals (a modulator 112 receives a composite audio signal from the summer 110 and an ultrasonic carrier signal from the carrier generator 114, and modulates the ultrasonic carrier signal with the composite audio signal, Pompei, [0022]), wherein said driving includes at least driving the directional speaker in accordance with the ultrasonic signals to produce ultrasonic output for providing the directionally constrained audio (A modulator 112 receives a composite audio signal from the summer 110 and an ultrasonic carrier signal from the carrier generator 114, and modulates the ultrasonic carrier signal with the composite audio signal, Pompei, [0022]) and wherein in view of the beam attribute input, the ultrasonic frequency of the ultrasonic signals is increased which increases the attenuation and the width of the beam of the directionally constrained audio (the phased array may be used to generate a frequency-dependent beam distribution, in which modulated ultrasonic beams with different frequencies propagate through the air along different projection paths, Pompei, [0039]; since Pompei discloses different frequencies, whenever the frequency is increased, the beam width inherently increases as well since it is known in the art that ultrasonic waves have decreasing directivity as frequency increases).

Although Pompei does not explicitly disclose the feature wherein the beam-attribute input is wirelessly received from a portable device, Kuriyama et al. teaches a system of directing a set of speakers to a remote control based on signals transmitted to a light receiving element indicating a position of the remote control (see English abstract and constitution) and it would have been obvious to use this system of wirelessly input beam attributes with the apparatus of Pompei with the motivation of improving a similar device with the feature of wirelessly input beam attributes in the same way that Kuriyama et al. has improved a conventional speaker and remote control unit.

Regarding claim 18, Pompei in view of Kuriyama et al. teaches a method as recited in claim 16.

Although Pompei does not explicitly disclose altering the orientation of the directional speaker, Pompei does disclose that the prior art teaches a directional speaker that is repositionable with respect to said system (ultrasonic signal is typically directed along the selected projection path by a mechanical steering device, Pompei, [0006]). It would have been obvious to one of ordinary skill in the art to implement, into the method of Pompei in view of Kuriyama et al., the feature of mechanical steering, or repositioning, as disclosed as prior art by Pompei since doing so would have been obvious to try.

Regarding claim 19, Pompei in view of Kuriyama et al. teaches a method as recited in claim 16, wherein the beam attribute input depends on a distance or a position of an object (directing a set of speakers to a remote control based on signals

transmitted to a light receiving element indicating a position of the remote control (see English abstract and constitution, Kuriyama et al.).

Regarding claim 20, Pompei in view of Kuriyama et al. teaches a method as recited in claim 16, wherein the beam attribute input being received is automatically provided, not based on an input entered by the user (the temperature/humidity control device 130 may include a thermostatically controlled cooler, or a dehumidifier that maintains desired atmospheric conditions along the path traversed by the ultrasonic beam based on the preexisting atmospheric conditions, Pompei, [0044]).

Regarding claim 21, Pompei in view of Kuriyama et al. teaches a method as recited in claim 16, wherein in view of a beam-attribute input, the direction of the directionally constrained audio is changed (directing a set of speakers to a remote control based on signals transmitted to a light receiving element indicating a position of the remote control (see English abstract and constitution, Kuriyama et al.).

Regarding claim 22, Pompei in view of Kuriyama et al. teaches a method as recited in claim 16, wherein the directional speaker has a plurality of segments to emit the directionally constrained audio; and wherein the segments can be individually controlled for emitting the directionally constrained audio (the acoustic transducers 0-11 [Pompei, 0025] each output an ultrasonic beam simultaneously so that multiple audible beams are generated in desired directions, [Pompei, 0039]).

Regarding claim 24, Pompei in view of Kuriyama et al. teaches a method as recited in claim 22, wherein the attribute controls at least one of the many segments to affect the width or the direction of the directionally constrained audio (the temperature/

humidity control maintains desired atmospheric conditions along the path traversed by the ultrasonic beam, from the transducer to the listener, Pompei [0044]).

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi et al. in view of Manabe (US Pat. No. 6,643,377 B1).

Regarding claim 26, Takahashi et al. teaches a directional audio delivery apparatus for a system, comprising: a device that receives incoming encoded signals and provides decoded audio signals for use by the system (set top box, Col. 4, line 58); audio conversion circuitry that produces ultrasonic signals based on the decoded audio signals provided by said device (It is inherent in the disclosure of Takahashi et al. that there is circuitry that produces ultrasonic signals based on the audio signals provided by the box. This is shown by the carrier wave superposed with an audio wave at the output. There must be some circuitry that generates the carrier wave in the system. Otherwise, there could be no carrier wave generated at the audio output as stated by Takahashi et al., Col. 3, line 49-53); and a directional speaker that outputs an ultrasonic output for a user based on the ultrasonic signals (ultra sonic speaker emitting highly directional ultrasonic waves, col. 4, lines 24-29), wherein the ultrasonic output generates audio output (the waves carry an audio wave to be de-modulated, col. 3, lines 49-53), wherein the directional speaker is in a box (), wherein said apparatus further comprises a beam-attribute control unit (commander can rotate the speakers upon pushing a button, col. 4, lines 61-64), operatively connected to said directional speaker (transmits commands to photo sensor unit in base member of speaker, col. 4,

lines 61-64), said beam-attribute control unit being configured to electronically control at least one attribute of the audio output (direction of beam by rotating speaker, col. 4, lines 61-64) wherein the beam-attribute control unit receives wireless inputs from a portable device of a user to control the at least one attribute (commander, col. 4, lines 61-64).

Although Takahashi et al. does not explicitly teach some features of the claimed invention, Manabe teaches the features wherein based on the wireless inputs from the portable device, both a beam direction (blades which are moved in order to alter the curvature to direct the sounds towards the listening point, Manabe, col. 5, lines 56-63) and a beam width (changing the curvature influences the beam width as shown in fig. 7 of Manabe) of the audio output can be independently adjusted by the user (the listener can move to change the direction of output, Manabe, col. 5, lines 1-6; and the blades are adjustable by the curvature controller, Manabe, col. 5, lines 56-63), without the need to move the box physically (the speaker box does not need to be moved physically) and it would have been obvious to combine the features of Manabe into the apparatus of Takahashi et al. with the motivation of customizing the output to the user since one of ordinary skill in the art would have recognized that the improvements of Manabe can be used to improve similar ultrasonic audio output systems in the same way.

Response to Arguments

Applicant's arguments with respect to claims 1-3, 5-16, 18-22 and 24-25 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kile O. Blair whose telephone number is (571) 270-3544. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KB

/Vivian Chin/
Supervisory Patent Examiner, Art Unit 2614